REMARKS

Claims 1-22 are pending.

Claims 1-22 stand rejected.

Claims 1, 3, 4, and 22 have been amended for clarity.

Claim Rejections - 35 U.S.C. § 101

Claims 1-22 stand rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter and as not being supported by either a specific asserted utility of a well established unity.

The Federal Circuit recently addressed the subject of subject matter patentability in *In re Bilski*, 545 *F.3d* 943 (Fed. Cir. 2008) (*en banc*). In *In re Bilski*, the court "conclude[ed] that the "useful, concrete and tangible result" inquiry is inadequate and reaffirm[ed] that the machine-or-transformation test outlined by the Supreme Court is the proper test to apply." *Id.* "The machine-or-transformation test is a two-branched inquiry; an applicant may show that a process claim satisfies §101 either by showing that his claim is tied to a particular machine, or by showing that his claim transforms an article." *Id.*

Although the two-branched inquiry is stated in the alternative, Applicants respectfully submit that the method of claim 1 and claims directly or indirectly dependent thereon meet both of the two-branched inquiries set forth in *In re Bilski*.

The method of claim 1 is specifically tied to a particular machine, namely "a computer system". Claim 1. More specifically, claim 1 is a "method of using a computer system." *Id.*

Additionally, the method of claim 1 tranforms an article(s) into a different thing. Claim 1 recites a "method of using a computer system to consolidate multiple configuration models of a product." *Id.* The multiple configuration models represent at least one article, and the article represents a physical object, namely a product. The article(s) is/are transformed into a "consolidated model". *Id.* More specifically, claim 1

recites "combining the first and second configuration models into a single, consolidated model that maintains a non-cyclic chain of dependencies among families and features of families for use in answering configuration questions related to the product." Additionally, the method of claim 1 clearly recites a practical application of the method, namely that the consolidated model is "for use in answering configuration questions related to the product." *Id.*

The invention embodiment of claim 3, together with claims directly or indirectly dependent thereon, is a particular machine, i.e. a computer system, "configured for consolidating multiple configuration models of a product" Additionally, the computer system of claim 3 is configured to tranform an article(s) into a different thing. The multiple configuration models of claim 3 represent at least one article, and the article represents a physical object, namely a product. The article(s) is/are transformed into a "consolidated model". *Id.* More specifically, claim 3 recites "combining the first and second configuration models into a single, consolidated model that maintains a non-cyclic chain of dependencies among families and features of families for use in answering configuration questions related to the product." Additionally, claim 3 clearly recites a practical application of the method, namely that the consolidated model is "for use in answering configuration questions related to the product." *Id.*

The invention embodiment of claim 4 is also related to a physical device and includes instructions, namely a "computer readable medium having instructions encoded therein and executable by a processor to consolidate multiple configuration models of a product." After the decision in *In re Bilski*, the USPTO Board of Patent Appeals and Interferences (BPAI) addressed subject matter patentability of a computer usable medium in *ex parte Bo Li*. *Ex parte Bo Li*, Appeal 2008-1213 (USPTO BPAI 2008, November 6, 2008). The BPAI, citing *In re Bilski* and *In re Lowry*, 32 F.3d 1579 (Fed. Cir. 1994), held that a computer program product comprising a computer usable medium having a computer readable program code embodied therein and adapted to be executed to implement a method for generating a report recites patentable subject matter under 35 U.S.C. § 101. Likewise, Applicants respectfully submit that the computer readable

medium of claim 4 and claims directly or indirectly dependent thereon also recite patentable subject matter.

Applicants respectfully submit that claims 1, 3, and 4 meet the requirements of 35 U.S.C. § 101 as construed by, for example, the Federal Circuit in *In re Bilski* and *In re Lowry*, 32 F.3d 1579 (Fed. Cir. 1994).

Accordingly, Applicants respectfully request withdrawal of the rejection.

Claim Rejections - 35 U.S.C. § 112

Claims 1-22 stand rejected under 35 U.S.C. § 112, first and second paragraphs. Applicants respectfully traverse the rejections.

A. The 35 U.S.C. § 112, first paragraph rejection is based upon the same rationale as the 35 U.S.C. § 101 rejection. As supported by *In re Bilski*, per the foregoing discussion, claims 1-22 do not recite an abstract idea. Claim 1 and claims dependent thereon recite a method tied to a particular machine and transforms an article(s) to a different state. Claim 3 and claims dependent thereon recite a particular machine. Claim 4 recites a physical device having instructions encoded therein, and this type of device has recently again been held to be patentable by the BPAI in *ex parte Bo Li*. Accordingly, since the 35 U.S.C. § 112, first paragraph rejection is based on the same grounds as the 35 U.S.C. § 101 rejection, and the 35 U.S.C. § 101 rejection should be withdrawn under *In re Bilski*, *In re Lowry*, and *ex parte Bo Li*, Applicants respectfully request withdrawal of the rejection under 35 U.S.C. § 101.

B. Claims 1-22 are also rejected under 35 U.S.C. § 112, first paragraph, because "current case law (and accordingly, the MPEP) require such a rejection" if the claims do not meet the requirement of 35 U.S.C. § 101. Since, as the foregoing discussion supports, claims 1-22 meet the requirements of 35 U.S.C. § 101, this rejection under 35 U.S.C. § 112, Applicants respectfully submit that this rejection should be withdrawn..

C. Claims 1-22 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The Office Action states, "Specifically,

based on applicant's argument, that [the] step of determining the conflict is not based on the exclude type of rule, examiner is unclear from the disclosure how the conflict is determined." Office Action, p. 9. With regard to "the exclude type of rule", Applicants' previous arguments did not characterize an element of claims 1-22. Applicants previously stated that, "the discussion of "exclude type rules" was a discussion of the teachings of *Lichtenberg* to point out that the *Lichtenberg* is not teaching about a conflict of rules but rather is teaching about the distinct concept of compatibility of alternatives." April 7, 2008 Response. "The discussion was not a characterization of the present invention." Thus, Applicants' prior argument with regard to "exclude type rules" is not a characterization of the claimed invention and, thus, is not a limit on the scope of the present invention.

With regard to support for "identifying a conflict between at least two of the configuration models", the Specification of the Present Application includes a "Check for unspecified buildables." Present Application, para. (96). In one embodiment, the presence of an unspecified buildable indicates a conflict between at least two configuration models that triggers allowing a rule from one model to extend into another at a non-trivial family and repair the extension at a family below the non-trivial family. See Present Application, paras. (98)-(101). **Note, the present invention is defined by the claims and not by specific embodiments in the Specification of the Present Application.**

Accordingly, Applicants respectfully request withdrawal of the rejection.

Claim Rejections - 35 U.S.C. § 103

Claims 1-22 stand rejected under 35 U.S.C. § 103(a), as being unpatentable over U.S. Publication No. 2002/0165701 to Lichtenberg et al. (hereinafter "*Lichtenberg*") in view of the IEEE article "The Combining DAG: A Technique for Parallel Data Flow Analysis by Robert Kramer et al. (hereinafter "*Kramer*"). Applicants respectfully traverse the rejection.

Applicants respectfully submit that *Lichtenberg* neither teaches nor suggests "consolidate[ing] multiple configuration models of a product." Present Application, claims 1, 3, and 4.

Lichtenberg teaches that a product is represented by a **single** model and does not address "consolidate[ing] multiple configuration models of a product". *Id.* More specifically, "a product model is used to model relevant aspects of the product." *Lichtenberg*, para. 0224. "The product model describes components, attributes for these components, as well as alternatives for each component and values for each attribute." *Id.*, para. 0226. "Furthermore the product model comprises a group of rules relating to compatibilities between components and attributes." *Id.* See also, *Lichtenberg*, paras. 0234-0261 which describe the product model in detail. Notably, *Lichtenberg* no where does *Lichtenberg* discuss "consolidate[ing] multiple configuration models of a product" as recited by claims 1, 3, and 4.

Lichtenberg teaches representing the **single** model as a directed acyclic graph (DAG). *Lichtenberg* teaches that "the product model is encoded as a virtual table[, and] the virtual table is a directed acyclic graph that represents all consistent configurations." *Lichtenberg*, para. 0231. *Lichtenberg* teaches that:

> An important aspect of the invention is the process of transforming **a** product model to a compact and efficient representation. The purpose of the transformation is to first find a way of encoding and finding all solutions to the configuration problem and then tabulate them virtually in a virtual table such that information relating to the configuration problem can be obtained by efficient queries to the virtual table. The encoding involves finding an encoding of the components of the product model and a corresponding encoding of the rules. A DAG will represent all the rules, such that enquiries about valid solutions to the rules can be performed efficiently. *Lichtenberg*, para. 0274.

Thus, the DAG is used to represent all the rules of a **single** product model and is unrelated to "consolidate[ing] multiple configuration models of a product" as recited by claims 1, 3, and 4.

Lichtenberg does teach "combining two DAGs". *Lichtenberg*, para. 0076. However, Applicants respectfully submit that the combining of DAGs taught by

Lichtenberg is not in the context of "consolidate[ing] multiple configuration models of a product" as recited by claims 1, 3, and 4. Specifically, *Lichtenberg* teaches:

> [0077] In order to maintain a suitable DAG, the representing of the rules in the DAG may further comprise the steps of:
>
> [0078] identifying a first and a second node having the same expression and the pointers of which point to the same nodes, and
>
> [0079] having pointers pointing to the first node point to the second node.
>
> [0080] In that situation, two nodes actually representing the same contents are reduced to only one.

Lichtenberg also teaches:

> [0134] It is preferred to modify the DAG by as early as possible removing the "hidden" components. This may be done by:
>
> [0135] for each of the rules, constructing a partial DAG representing the rule,
>
> [0136] identifying at least one of the components to be hidden,
>
> [0137] selecting an ordering of the identified components,
>
> [0138] initially constructing an actual DAG representing no rules and then repeatedly,
>
> [0139] selecting a non-selected component of lowest order,
>
> [0140] repeatedly, until all partial DAGs comprising expressions relating to the selected component have been chosen:
>
> [0141] choosing a partial DAG comprising expressions relating to the selected component,
>
> [0142] combining the actual DAG with the chosen partial DAG into a new actual DAG,
>
> [0143] changing the actual DAG by:
>
> [0144] identifying nodes in the actual DAG comprising expressions relating to the identified component,
>
> [0145] removing these nodes from the actual DAG,

[0146] adding nodes, not comprising expressions relating to the identified component, to the actual DAG so that the compatibilities implied by the identified component are reflected by the actual DAG,

[0147] providing the DAG by combining the actual DAG with all non-chosen partial DAGs.

Accordingly, *Lichtenberg* teaches representing the **single** model as a directed acyclic graph (DAG), and *Lichtenberg*'s teachings regarding combining DAGs does not teach or suggest "combining the first and second configuration models into a single, consolidated model." Claims 1, 3, and 4.

Additionally, Applicants respectfully submit that para. 0006 of *Lichtenberg* is not referring to a conflict between "multiple configuration models of a product" but is rather referring to alternative choices to be made when configuring a product, i.e. "a specific alternative must be selected for each of the components to build the complex product." *Lichtenberg*, para. 0006. Furthermore, Applicants respectfully submit that paras. 0007-0008 do not refer to conflicting models but rather relate to (i) configuring a product by choosing alternatives and (ii) "all combinations of the alternatives will not work." *Id.*, para. 0008. For example, if "the front and the rear wheel must be of the same type" then an alternative type rear wheel would be incompatible with a different type of front wheel. Thus, references to alternatives in *Lichtenberg* and ""all combinations of the alternatives will not work" is not a reference to "combining the first and second configuration models into a single, consolidated model." Claims 1, 3, and 4.

Regarding *Kramer*, the Examiner admits that "*Kramer* however fails to teach that the DAGs are for consolidating multiple configuration models and limits the teaching to consolidating multiple paths in a non-cyclic way as in a DAG." Office Action, p. 13.

Accordingly, since neither *Lichtenberg* nor *Kramer* relate to "consolidate[ing] multiple configuration models of a product" as recited by claims 1, 3, and 4, *Lichtenberg* in view of *Kramer* fail to teach or suggest:

consolidate[ing] multiple configuration models of a product [] comprising[]:

identifying a conflict between at least two of the configuration models, wherein the configuration models are organized in accordance with respective directed acyclic graphs, each configuration model includes at least one ancestor configuration model family space and a child configuration model family space below the ancestor configuration model family space, a first of the conflicting configuration models comprises an ancestor configuration model family space that is different than an ancestor configuration model family space of a second of the conflicting configuration model, and each child configuration model family space constrains the ancestor configuration model family space above the child in accordance with configuration rules of the configuration model to which the child belongs;

extending at least one of the ancestor configuration model family spaces of the conflicting configuration models so that the ancestor configuration model family spaces of the first and second conflicting configuration models represent the same ancestor configuration model family space;

removing from the child configuration model family space any configuration space extended in the ancestor of the child configuration family space; and

combining the first and second configuration models into a single, consolidated model that maintains a non-cyclic chain of dependencies among families and features of families for use in answering configuration questions related to the product.

For at least the foregoing reasons, Applicants respectfully request withdrawal of the rejection of claims 1, 3, and 4 and claims directly or indirectly dependent thereon.

CONCLUSION

In view of the amendments and remarks set forth herein, Applicant respectfully submits that all pending claims are in condition for allowance. Accordingly, Applicant requests that a Notice of Allowance be issued. Nonetheless, should any issues remain that might be subject to resolution through a telephone interview, the Examiner is requested to telephone the undersigned at 512-338-9100.

CERTIFICATE OF TRANSMISSION

I hereby certify that on January 15, 2009, this correspondence is being transmitted via the U.S. Patent & Trademark Office's electronic filing system.

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Respectfully submitted,

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